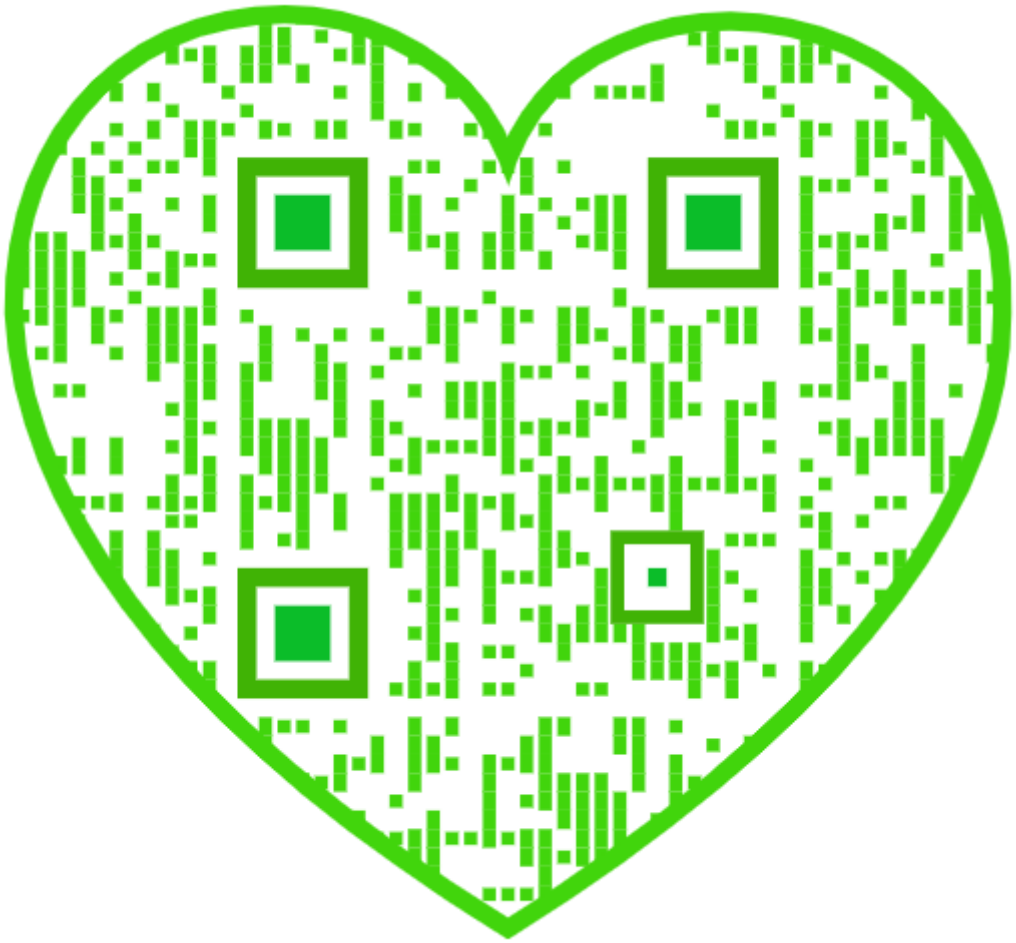

The PEARCE NEW METHOD of BEE KEEPING

By JOSEPH A. PEARCE
Expert in Horticulture and Bee Keeping.

REVISED THIRD EDITION

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JOSEPH A. PEARCE.
Author of the Pearce System of Bee-Keeping.

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PREFACE

I write this book for the purpose of putting in condensed form the best things that I have learned in my forty years of bee keeping so they may be perpetuated for the benefit of any who may wish to take up bee keeping for pleasure or profit.

By this method, bee keeping can be easily pursued almost everywhere in the city or country. There should be very many more people interested in gathering this enormous honey supply which is now allowed to go to waste.

The money making possibilities in honey production is estimated to be worth millions of dollars and it is a refined, health-giving business which has wonderful possibilities for the young and a pleasing and interesting occupation for those who have retired from active business.

J. A. PEARCE.

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CHAPTER I

How I Discovered My Present Method of Bee Keeping.

Twenty years ago I began to put bees in buildings. One of the first I put up in a stable loft. I had known for some time that bees had been kept in small rooms or large places prepared for them and left to themselves to build their combs as they pleased. I was told that they would eventually fill these upper rooms or boxes, and stay there from year to year without swarming. The people of the house could go up in the winter when the bees were dormant open these places and cut off honey for themselves as wanted. This looked attractive to me, but it was said that the moths would get in and destroy the bees, and I did not like this chunk honey, as it would not be neat and nice, so with this much information I started in to see if I could devise something with our movable frame hives, large enough so the bees would not swarm and the moths could not destroy them, and that we might get the honey in nice one-pound boxes, as we were getting it out in our bee yard.

The first outfit that I put up was three hives set side by side. I cut holes into these outside hives from the middle one, for the bees to go through. Then I let the bees fly out doors from the middle hive, and put my surplus cases on the middle hive. The bees soon began to fill these cases, but to my surprise and regret, I could not get the bees to go into these side hives. This, I saw was of no use so I took away these side hives, shut up the openings and put one of them on top of the middle hive. Very soon the queen began to fill this body with brood instead of swarming out, and I soon had seventy-five pounds of nice comb honey in the cases and was delighted. I then saw that I had been making a mistake in making my hive broad instead of high to enlarge it. Many of our bee-keepers think, that they should have a larger hive than the eight frame, and add ten, twelve or even fourteen frames in width instead of putting two of the eight-frame hives, one above the other, as I did twenty years ago, making a tall hive more like a hollow tree—the natural home of the bee.

This hive is about a quarter larger than the Quimby hive and is about the right capacity for a queen to deposit all the eggs she wishes for the colony, so there will be no swarming, if sufficient surplus cases are put on in time so the honey may be carried above, to leave adequate space for the queen. Then again it is about the right size

and form to enable the bees to store an ample supply to carry them through any Winter and Spring without danger of starvation. Now, after twenty years' use, I do not see any need for changing to anything different. This, then, is the hive I use and recommend.

You will please notice, then, that all that is necessary to procure the results that we get from this method, is doubling the size of the hive and placing these hives in buildings where they can be amply protected. This makes all the other things possible which we will tell you about later.

In handling bees by bee keepers in general, there has been about four ways resorted to for the purpose of getting the bees through the season in a successful manner. The first that I will mention is to put the bees in a single hive body, with 8 to 12 frames, of the Langstroth or regulation dimension. This hive is left on the summer stand or place where it stood all through the year without much of any protection. Others not being satisfied with this method, resort to some kind of packing about the hives, either put about the hives in the Fall and remove it in the Spring, or by having a permanent case attached to the hives to remain through the whole year, such as the original Root double hive and the modifications of it that have come down to the present time. Then some few, but this class has not been large, have tried burying their bees in a trench somewhat as they would for vegetables.

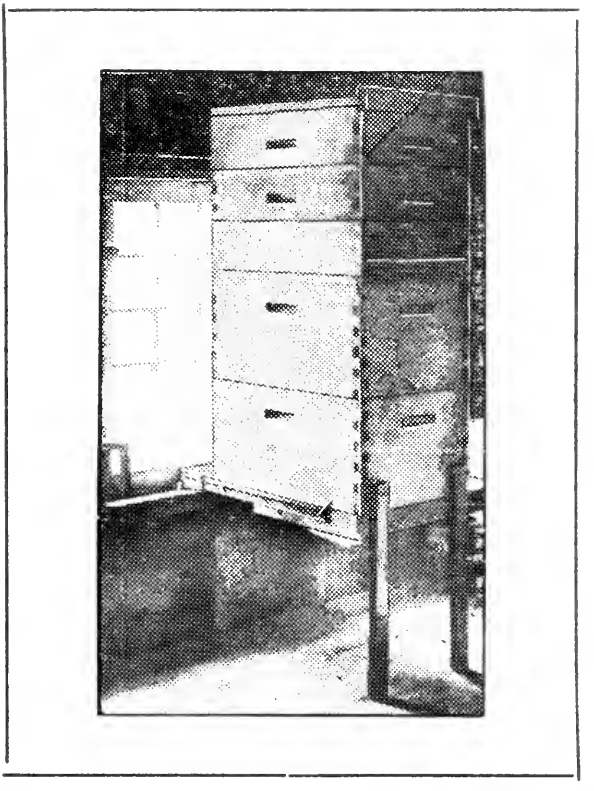
Then another and much larger class, put their bees into cellars, below ground. All of these people use a single hive body for keeping their bees in. And without saying anything about the merits of any of these four methods for the present, I wish to bring to your notice the four places and ways that I use in my method of handling bees, which is known at the Pearce Method of Bee Keeping. The first place I will mention where they may be kept is in a barn or stable loft. The next is in house attic as kept in cities, next in poultry houses. Then in a house or shell, built especially for the bees. In all these ways, the bees are kept in two of the regulation hives, each hive being the same size and shape as the hive used by those who keep their bees below ground and out of doors. Thus you will observe that I use a hive with just double the capacity of my brother bee-keepers generally. These two hive bodies are used one above the other, making a tall hive that is divisable and may be made into two hives and used by others or put together as we use it.

Our hives in orchard at Author's home.

CHAPTER II

The Hive We Use and Why We Use It.

I think it is plain to you by this time the we use a hive made of two of the ordinary Langstroth hives, that we formerly used and that is still used by the great mass of bee keepers, generally. In this article I will tell you all about it and why we used it. The first great reason is because the small hive we formerly used did not hold an adequate supply of honey to carry the bees through the winter safely and it was just as inadquate to give the queen sufficient room to deposit all the eggs she would in the spring up to the honey harvest. Two very great defects. The one caused tremendous winter losses and the other prevented the queen from giving us the enormous swarm of bees early for the honey harvest that she would have given us if she could have been supplied with a more spacious hive. In talking over winter losses with that veteran bee keeper, Geo. E. Hilton, he remarked that he felt sure that nine-tenth of the bees that have died have died of starvation. The cause for this was the hives were too shallow. They do not in any way provide space enough above the bees to hold enough stores for a winter's supply. When we think the matter over in regard to these shallow hives, we wonder that as many have lived through the winter without starvation in these hives as there have. Bees as every one knows, store their honey above them, and they should be given a hive of sufficient height to allow them to store a full supply to last them through any winter and spring and this is just what this tall hive made up of two bodies that I use and recommend, does. It is well known now that bees in the fall drop down to the bottom of any hive they are in, get into a circular mass and eat upward and do not or cannot see that it is well filled with winter stores. Then place these hives in shelters such as we recommend where you can give them the protection they should have from all storms that blow, where you can see that their entrances are open at all times so they will have proper ventilation and have a flight at any time in the winter when the weather is suitable. For it has been starvation and want of ventilation that has been two of the great causes of mortality in our bees. Many of our hives weighed in the fall around a hundred pounds. A hive that weighs a hundred pounds in the fall, is good for 100 to 200 next summer.



This hive is in the home of State Representative George W. Welsh. It gave him $50 worth of comb honey the first year it was installed, and is still doing as well.

OUR HIVE.

To procure our Hive, send to any dealer of Bee Supplies for the following:

1. Plain bottom board, with ½inch opening.
2. Standard dove-tailed 8 frame hives.
1. Plain Higginsville Cover.
2. 4 Super Cases.
16. Hoffman Brood Frames, (8 in each hive.)
24. One-pound Boxes for each Cuper.

CHAPTER III

When and How to Change from the Single to the Double Hive.

If you are keeping your bees in a hingle hive as you probably are and would like to change to our double method, you can do so most easily as we use no new fangled appliances and our hives are of the latest pattern in use. The best times to change in our latitude would be in the spring before the honey flow about the last of April, and again at the time of taking off your white honey in July. Then you can fit up another hive body the same as the one you have. Set these on your parent hives and have them build up. If the season is good and there is fair fall flow, they will build up enough but if it is not it may be well to feed some as it is so important to have them have plenty of stores for winter. If you should think well to feed, you can put another hive body on top. In this put a 10-pound pail nearly full of syrup well dissolved into water and perforate the lid with fine holes, not too many. See that the lid is well put on and invert the pail on the frames right over the bees. It is the most natural way for bees to get their stores right above them. Invert the pail and the suction will hold the syrup in only as fast as the bees suck it out. When all is done cover up well with some porous material, old cloths or quilts or a tray filled with dry chaff is the best. If you should ever think this double system not the best and wish to change back all you have to do is to set your top hive off again, and all would be just as before. But none that have tried it feel like going back to the old way. If you put another body onto the hive, as you already have it will prevent swarming, which is such a nuisance; your bees will be held together through the honey season without swarming and the results in honey are liable to be as large or larger than if they are worked the other way and allowed to swarm. At least that was our experience the year when I moved a load of bees home from an apiary where the location seemed much more favorable than where mine were placed. I doubled mine right up while those in the more favorable yard were left single yet mine filled the top hives and gave considerable more surplus than those in the single hives and were fine for winter. This is a fine plan, as where they are doubled in this way in the spring, they are sure to be alright for winter or to be set apart at the end of July to make increase at the end of the white honey flow, if you wish.

Changing from the single to the double hive.

Making my first swarm by setting the two bodies apart as shown.

CHAPTER IV.

The Pearce Method of Making New Swarms.

Theabove cut shows us making first public demonstration showing how easy it is to make swarms by the Pearce Method of dividing, i. e., by just setting the two hive bodies apart.

By this method of handling bees in double height hives, we are enabled to hold our bees together until we take off our white honey, about the first of August, without loss from swarming. Then if we determine to make increase, this is the time to act. Prepare a hive with empty combs, or full sheets of foundation, in wired Hoffman, or other movable frames. Prepare one of these hives for each hive from which you intend to make a new swarm. You should also have a good queen for each hive thus prepared. These queens can be procured from any queen breeder for a low price at this time of the year. Or, if you are used to raising queens by some of the methods now used, you could have raised them for yourself. I believe you had better buy your queens unless you are well equipped and experienced.

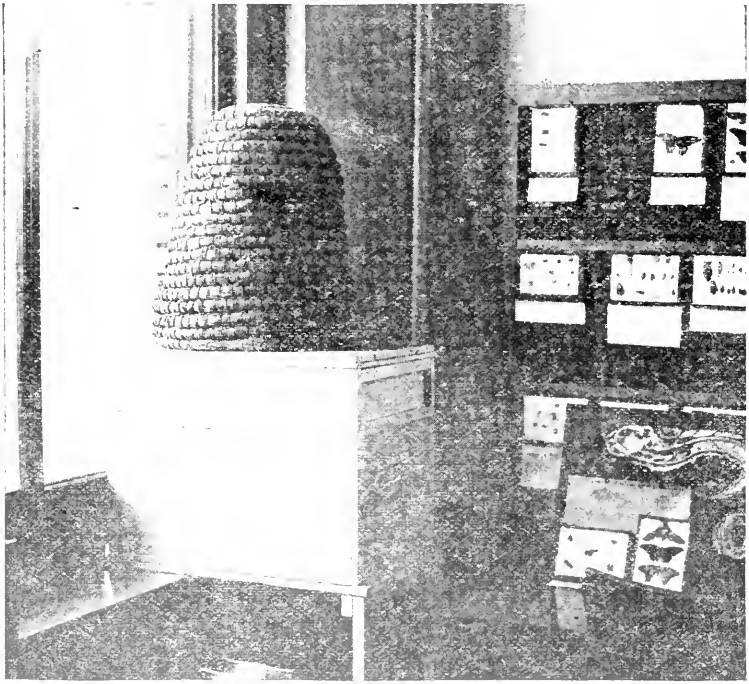
Now we will suppose that you have your empty hives placed by the side of each full one, from which you intend to make increase; that you have just removed your surplus honey and have a queen ready for each new hive. Pull back you old hive and place the one prepared where the old one stood. Then remove four outside frames from the new hive. Replace these thus removed by four frames from the old hive, preferrably two from each side, as they have more honey and are less liable to have brood. Place four frames from the new hive in the center of the old, by prying the frames left in the old hive to the outside. Drop the new ones in the center. In this way the four empty frames are in the center of each hive. Now raise up the top frame of your new hive, and place the new queen which is caged, in the middle and on top of the bottom set of combs. Replace top hive, and cover up carefully. This leaves the new queen and new hive, and a little honey where the old hive stood.

The old bees in this full hive will return to the new hive at the old location.

Now carry the old hive to its new location, about one or two rods away if possible. The queen and young bees will not go back to the old hive, as will the old bees that have had a flight, but will remain with the brood in the old hive at the new location. They will be strong enough to care for their brood. The old bees that you have got to forsake their old home for the new hive on the old stand would have died before winter. But they will answer the purpose of building up this new hive, and caring for it, until the young queens' progeny is on the stage of action, which will not be long, for if she were put in this new hive today, I would expect her to be laying by morning.

This completes the very best way I know of to make increases and get a large honey supply easily. It will be of great value to our fellow bee-keepers, and others, as soon as known and practiced, because you do not have to go thru the hive to look up the old queen, but simply carry her away with the old hive. You have all of August and September to see that these hives get properly prepared for winter. If the fall honey is not coming in as it should, it would be well to look to the bees at this season, and if not building up rapidly, feeding might be resorted to, as it is important that they should have sufficient properly sealed stores for winter. It should always be in order in early fall to give the bees a thorough examination, to ascertain their real condition as regard to stores, and also to detect any sign of disease.

When you take off the white honey, if you determine you do not care to make increase, it would be well to put on some supers, or full bodies till later, so as to give the bees room to secure surplus that might be coming in.

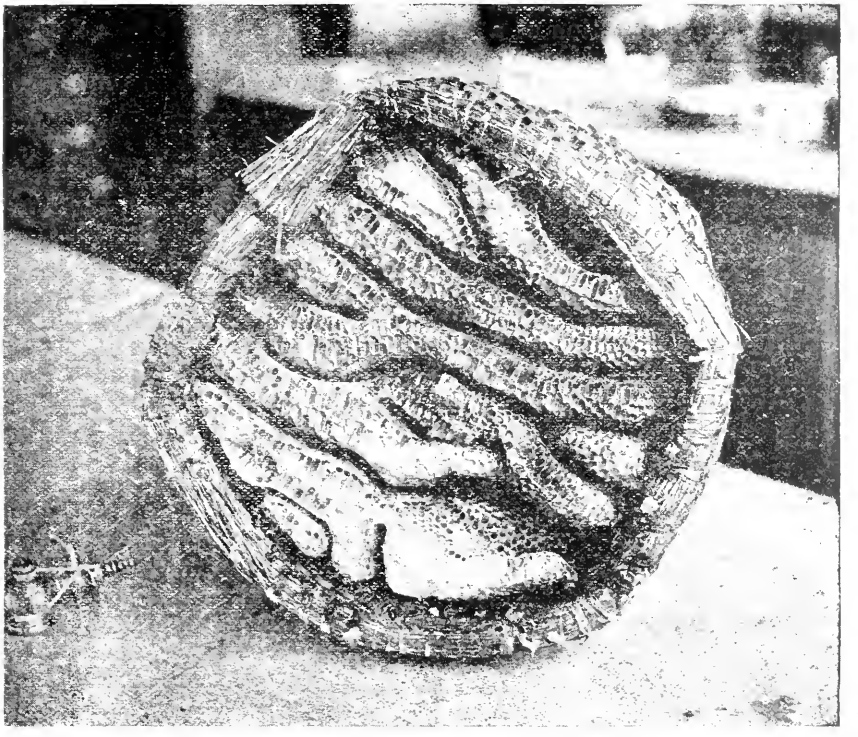


A little German hive in the High School, which is of value to show how small a hive was formerly used. One of our large swarms in our large hive would fill this little hive in two days on a good flow and be obliged to swarm out. In this cut we show the method of transferring from small Old Style German hive to removable frame hive, giving more room to bees and making them produce straight combs.

CHAPTER V

The Cause of Swarming and Swarm Control.

It is very probable that the cause of swarming, and its control is not very well understood by many of our bee-keepers, and I feel sure that these two things are of greater importance than almost anything else in our pursuit, for so many other things are affected by them. It would seem as if on these "hang all the law and the prophets" of bee-keeping. It is generally supposed that swarming is the natural and best manner of increase for the Bee family, and therefore it is not much use to try to prevent it, or find out the cause.



View of bottom of Old Style German Hive. Bees were transferred to regular moveable frame hive. While this hive is filled with honey, it is almost useless as there is no way to remove it without destroying contents.

It has been noticed that usually when there is a big sudden honey flow there is a spell of excessive swarming and therefore these two conditions seem to be in some way connected. So then bees do not swarm at all times alike as might be expected if they were just fulfilling the law of increase to perpetuate the race. It also has been observed that when bees swarm, about all available space in the hive is filled up. It does not necessarily follow that all the combs are wholly filled or sealed up, for as soon as ever so little honey is placed in the cells they are of no more use for the queen to deposit eggs in until this honey is moved. Then if a sudden large honey flow comes on and all available space in the hive is filled, there is nothing for the bees to do but start queen cells and swarm out as there is no place for the queen to deposit eggs. Bees will not cease gathering honey for any cause if any is to be had, therefore if there is a goodly number of bees in a hive and a large honey flow comes on and the queen is depositing from one to two thousand

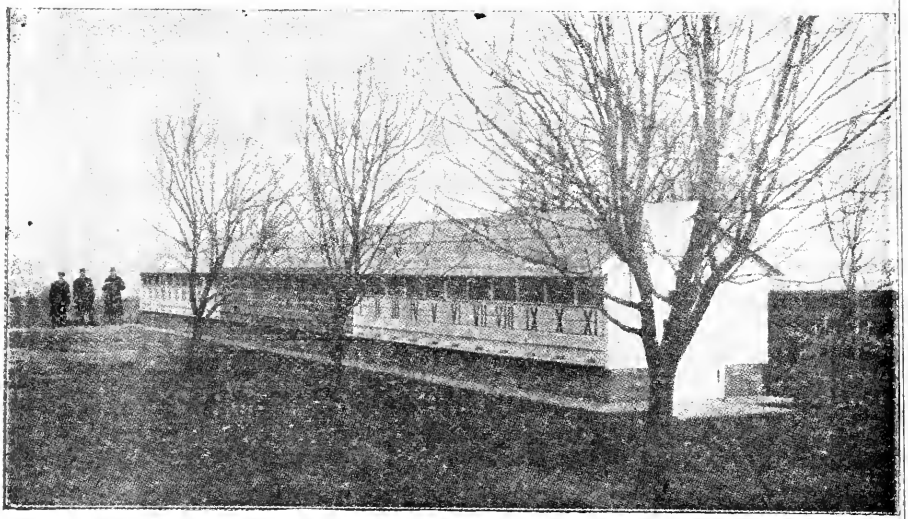
eggs in a day with pollen being brought in to feed the bees, it is only a question of a very short time till there will not be an available cell left for the queen to deposit eggs in. Then swarming is inevitable as it is the only way to make more space for the queen to deposit eggs whether we want swarming or not. Therefore, it seems as if the lack of space for the queen to deposit eggs is the prime cause of swarming.

If this is so it would be an unwise thing for a bee-keeper not to provide a queen with adequate space to deposit all the eggs she is capable of, especially in early spring when a big stock of bees are so essential. It is no use raising bees after the harvest comes. It is said that no bee carries in more than a spoonful of honey in her life time. If so, it is only by securing a great number of bees early that we can be assured a large honey crop. Several different ways have been adopted to give the queens more room.

Our veteran Bee Keeper, Alexander, used to extract from the brood chamber in the spring to give his queen room and feed back as needed. But this was a great deal of trouble and would not fill the bill as a very prolific queen might soon overflow a small hive with eggs alone. Then others run for extracted honey and extract from the surplus cases in order to give more room. But this is not much use if the brood chamber is too small and unless the queen is allowed to go above, swarming is liable to occur. None of us want swarming as early as fruit bloom, it is an intolerable nuisance. A large bee-keeper a number of years ago, I do not now remember his name, said if he "could only control this everlasting swarming he would surely have a great thing." Many devices at different times by different men have been gotten up to prevent swarming, but nearly all have failed as it did not provide for the making of increase artificially if increase is needed. Therefore it seems almost certain that the great cause of swarming is the queen becoming hampered by inadequate space to deposit eggs. If this is the cause, what is the remedy? Everything points to a larger brood chamber. More and more I feel sure bee-keepers are making up their minds to this. When we look at the little straw hives used in Germany and other countries we see clearly that our forefathers did not realize the capacity needed for their bees, why a good swarm such as we now have in our large hives would fill one of these little hives in two days on a good honey run and have to swarm out. To prevent this, we use and advise a very much larger brood chamber and find that two of these hives that we formerly used is none too large to hold an adequate winter supply of honey and is just as much needed to hold all the brood a good queen can supply up to the honey harvest. And surely it would be the height of folly to not supply the

queen with all the needed room at such an important season. And then we find it is the thing to prevent natural swarming; not one of all these 200 hives here have swarmed this year to my knowledge and I believe I would know if they had. It has not been as bad a year for swarming as last year, but a lot of fellows have had to chase around after swarms and climb trees. All of this might have been spared by just putting another hive body on the one the bees were in about the first of May and then putting on some honey cases early so the bees could carry the honey up out of this big brood nest to give the queen room, then go about your business till you take off your honey. If you want increase, you can have it by setting these hives apart and putting two more hives on these, one on each and a queen in the queenless one. Both our hives used are alike and interchangeable, 8 frames dove-tailed hives, and both bodies boiling over with bees, no loss from ascending or other cause, no climbing trees as these large hives control swarming naturally, give us the honey and save us untold labor and annoyance, enable us to get unlimited quantities of comb honey of the highest quality, a most valuable things, as the production of comb honey is most desirable in so many ways. It is clean, it is nearly double in price, and honey in the comb is by far better flavored than extracted honey, and further, its production should greatly assist us in eliminating foul brood.

Of all the things that I have found out about bee-keeping there is none of near so much value to the bee-keeping world as this method of swarm control, as it is accomplished by the use of two of the regular Langstroth hives used as one. No new fangled things are brought in or are necessary. And not only is this made possible for extracted, but we can produce, as you see, unlimited quantities of fine comb honey without having the bees swarm naturally and then later if we want increase we can have it easily, quickly and cheaply in three or four ways.



Our Method adopted by State of Michigan for its Prison Farm at Jackson. One of three Apiaries, each holding 68 Colonies at the West Farm, at Jackson Prison.

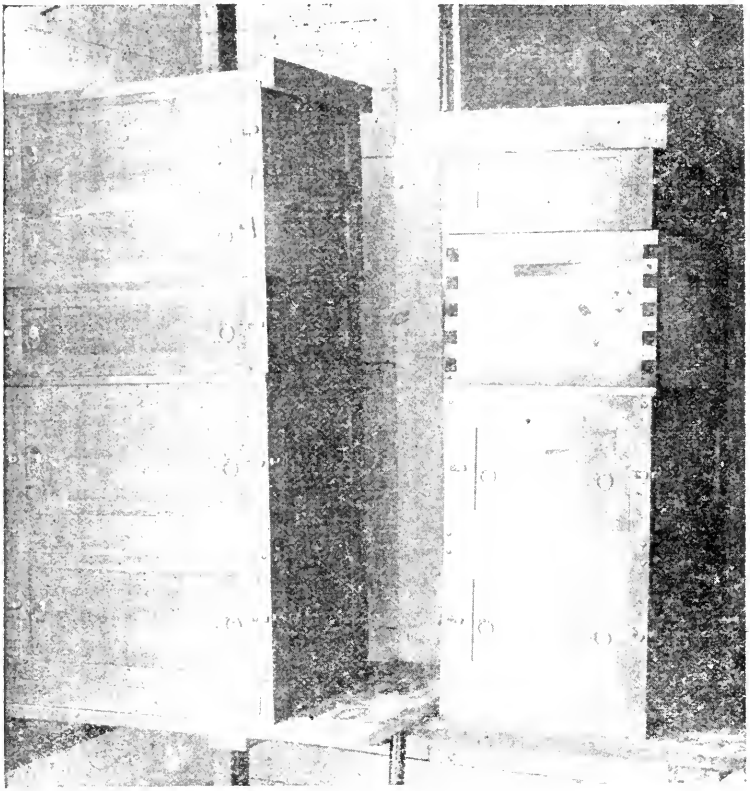
CHAPTER VI

Some of the Advantages of Having Bees in Buildings

Of the first I will mention is, the less liability of bees stinging when properly placed in buildings during the handling of them. The operator being shut away from the active flying bees from the hive entrance is not much disturbed by the few bees that leave the combs while handling them. If the windows are provided with suitable openings, all bees will rapidly escape and make no trouble. Then bees in buildings do not have to be moved in winter or summer. When we used to place our bees in the cellar in the late fall and remove them in the spring, it was always attended with a good deal of anxiety to know just when to make these movements, without much disturbance and considerable loss to the bees. Besides the advantage of a much superior wintering and healthier condition of the bees in the spring. When it comes to working with the bees in the house, we have them elevated about 20 inches, which makes it much easier to work Outside on the ground, we are without the shade that the house affords, which reminds me of what a relief such shelters would

be in the far south where the houses could have shutter to open on the sides for air and light. And working under such a canopy must be greatly valued by our southern bee-keepers, lumber also being much cheaper there than here. The advantages of having a shelter at hand with the bees, where we can keep our appliance, to work with, cannot be too highly appreciated, as we do not have to go back and forth to a honey or supply house to get the fixtures we need. The value of this alone and the benefits of the shelter from storms and the shade afforded would go far towards paying for the construction of the shelter. And when we look at our bees so nicely housed away from all the severer storms, it makes one wonder that any one should ever leave their bees out most of the time where it is impossible to keep the entrance of the hives open for proper ventilation that is so essential.

One of the greatest benefits from the shelter is that we can work with our bees in almost all kinds of weather, when if they were outside we would not think of working with them. I looked through a light colony the 15th of March and saw that they had a queen and brood, but I would not have thought of this if they had been outside, so I feel sure if our bee-keepers will carefully weigh the advantages and disadvantages of these three prominent ways of keeping bees, they must become convinced of the vast superiority of building an inexpensive shelter for the bees where they are safe at all times from storms and marauders and where you can examine them at any time and keep the entrances of the hives open at all times from within and without, which is so very important for the well-beings of the bees. And the bees can remain winter and summer, no lugging up or down stairs twice a year, no packing, fall and spring, nor trouble and annoyance with double-walled hives during the working season. I feel sure if you reflect on these things, you will wonder that we all have not housed our bees before instead of keeping them in the different ways that we have, subjected to so much uncertainty, annoyance and inconvenience.



Two outfits put up a dozen years ago in a stable loft for a Banker, They are still doing well.

CHAPTER VII

Bees in House Attics and Barn Lofts.

House attics and barn lofts are about the only places where bees can be successfully kept in the cities. As there, on account of the proximity of the neighbors it would be impossible to keep them on the ground. It may not be known to every one, that bees when placed anywhere above the second floor do not give any annoyance to anyone on the ground, but this is a fact, and so it enables the people in the cities to keep bees and get a supply of this most pure and luscious sweet as well as their neighbors in the country. As about all the city dwellers have spacious

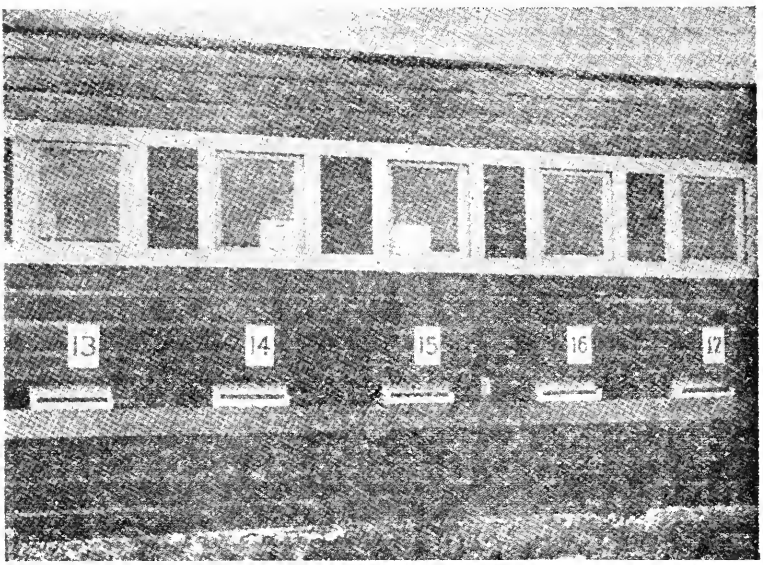
unused attics, which make very good places to install a few colonies of bees on this plan, which gives them a good deal of pleasure and profit, for there still remains a strong love in these city dwellers for something that resembles the farm from which many of them have come to take up the more artificial life of the cities. Brick walls and asphalt pavements do not quite satisfy them, and a few colonies of bees with their busy hum, seems to go a good ways towards filling this longing in their nature for something that reminds them of the old farm. Therefore, I hope those that are better acquainted with the business will hear me while I make a minute explanation in this chapter for the use of these people who have perhaps never kept bees before. Then I want to say that bees when properly placed seem to get equally as much honey in the city as those in the country. And now I want to caution everybody that attempts to keep bees inside of rooms or attics or lofts, to look well to their windows and make them so any bees that do accidently get in, can readily get out. Bees do not purposely come into a room, but if they do get in through some hole, they go on the windows and die there. It you take out all windows, all bees will go out immediately and no more will come in, so the way to fix all windows that you do not darken, is to cut the glass about half an inch short at the bottom of the window, or to darken all windows that are not so cut at the bottom. Be particular about this, for I feel sure that bees dying on windows was the prolific cause for the abandoning of old time house apiaries. And I feel sure that of the things I have found out, nothing has been of more importance to me than making this half inch cut at the bottom of the windows. This matter is of such importance that it would pay to have a carpenter or glass man, for in a half day or less they could fix all windows in the attic perfectly.

CHAPTER VIII.

How to Build a Model Bee-House for Twenty Swarms.

Always build your bee-house running North and South and on the level.

It is built North and South so that the bees on both sides get an equal share of sun light, so they do not get the cold winds from the north, or the uneven heat from the south. In other words, there is more protection from extremes: the cold wind in winters, undue heat in summer. If built East and West, the bees on the south-side would

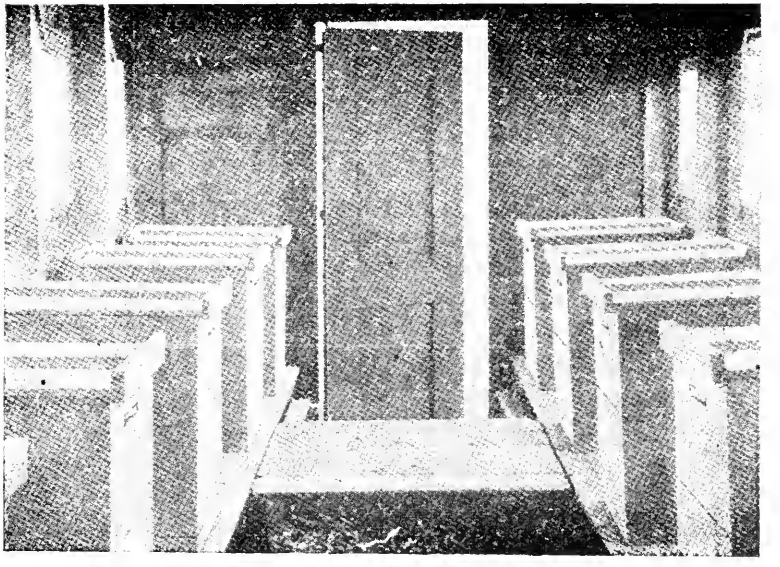


Exterior of a Model Bee House for ten Colonies of bees at the home of the author of this book.

always have sun, and those on the north would get none. In this way those on the east get the morning sun and those on the west the afternoon's. The house must be made level, else the hives will not be level on the shelves. Bee-hives must always be on the level, so that the combs of honey will be built straight and true.

The house should be about 7 feet wide and about 7 feet high, and as long as necessary, counting one foot for each swarm for which you intend to build a shelter. We set our hives two feet apart from center to center and have room on each side, which makes a total count of one foot of house for each colony. We place our studding two feet apart from center to center, and make our windows just two feet square on the outside of the sash. We place a window between each stud, and hinge it from the top, so that they swing outwardly, and shut against the studding. These windows must have the glass cut ½ inch short at the bottom, so any bees that might get into the house can easily get out again.

It would be well to put a little cement wall under the building, and a light cement floor inside. The frame is all built with 2 x 4 scantling, and for the side walls we use shiplap or German siding. The roof is covered with dressed hemlock and roofing material. We make a shelf on each side



Interior of house shown on page 22.

of the building, all along the inside wall. This shelf is twenty inches wide and placed twenty inches from the floor. It is used to set the hives on. The bracket for these shelves can be made mostly of short pieces left from the construction. These pieces are securely nailed to the studding and braced either from the studding, or down to the floor. A door is placed in each end of the building.

In siding up the building put on four strips which bring it level with the top of table, then tack on one strip lightly, for this strip is later to be taken out. Then side up until you are high enough for the bottom of your windows, which should be nearly four feet from the floor, place in your windows, and side from the top of them to the roof.

When all is completed, their should be a lighting board for the bees. This could be made with the piece of loose siding mentioned above. To fasten this, bore holes in the side of the building, and pivot this piece of siding; or brackets could be put on, and this strip hinged from the bottom so as to fall downward. In this way, this piece of siding can be used for a lighting board and in bad weather can be turned up, so as to close the entrance and to protect the bees. This lighting board should be hinged, so as to drop no further than ninety degrees.

We put strips of board across, nailed to the base of the rafters. These brace the building, and it makes a very convenient place to store things. This place overhead and one

under the benches, makes about all the store room, needed. You should also have a light table 2½x21 by 20 inches high, which is the same height as the benches on which the bees are placed.

This table is useful if you are making new swarms, transferring, or for any other kind of work, to set the second hive, on, tools etc.

If you wish, with very little extra labor and expense, see chapter XIX and XX a building of this kind can also be used for a poultry house.

CHAPTER IX

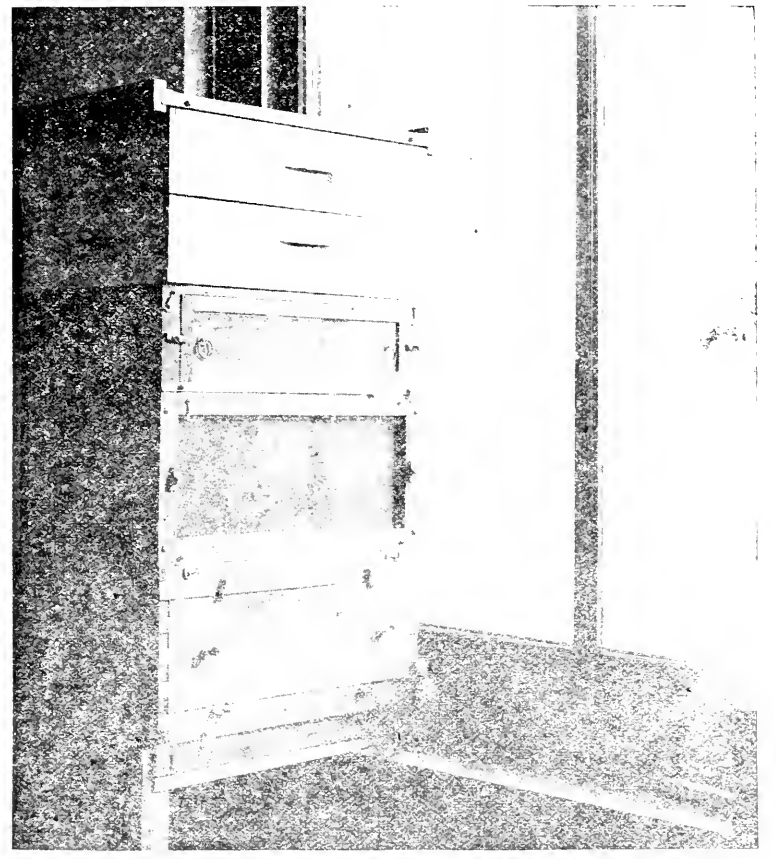
Installing and Care of Bees.

The house attic, loft in the barn or out-buildings are the best place to keep bees, because they are entirely out of the way. They are dry and warm and do not disturb anything on the ground, and nothing disturbs them, when placed anywhere near as high as the second floor, they seldom disturb anything below them, thus giving no annoyance either in city or country to anything about them when so placed.

The spring is the best time to install bees—from the middle of April to the middle of May—because then it is possible to get a honey crop to pay for them the first season. But if necessary, it can be profitably done in July, or the first of August, just after the first honey flow is over.

If the hives are installed in the attic of a house, the space from the floor up should be as much as four feet; if higher, all the better, as the tall hives with their honey cases extend upward some distance. If there are some windows in the attic, cut a piece out of the lower sash-bar a little longer than the width of the hive. Then put a two-inch piece around it on the inside on the top and on the ends, as the hive bottom fills up the bottom space so that when the hive is pushed up in place, it is two inches from the window. This will admit a window curtain to shade the bees from the hot sun, and will also facilitate the putting on and taking off of the honey cases and winter coverings. Build a shelf as high as the window or nail legs on to the back of the hive, which must be level, or the back end one-half inch higher. Put the hive up in place, and all is done. If, however, the bees are to be set by the wall, which is often done in attics or lofts, cut a three or four-inch slot

level with the floor as long as the width of the hive; put a piece of binding or scantling at the ends and on top of this opening, and then it is ready for the bees.



An outfit by the Pearce Method in the High School in Grand Rapids, which gave the teacher far above a hundred pounds of comb honey while away on her vacation. Repeats this each year.

If you have never handled bees, it is best to get a regular bee-keeper to furnish the bees and put them in for you. In case, however, this is impossible, the following method will be found of value:

If the bees have to be moved some distance, go to the bee-yard in the day-time and carefully put a covering of burlap or wire screen over the whole of the top of the hive and tack it to a little frame the size of the top of the hive. This is done so that it can be tacked to the hive and taken

off quickly. Wait until the bees are all in at night, then go and stop up the entrance, using some old cotton or calico rags pushed in with a screwdriver or knife. Leave one end out a little to get hold of, if desired.

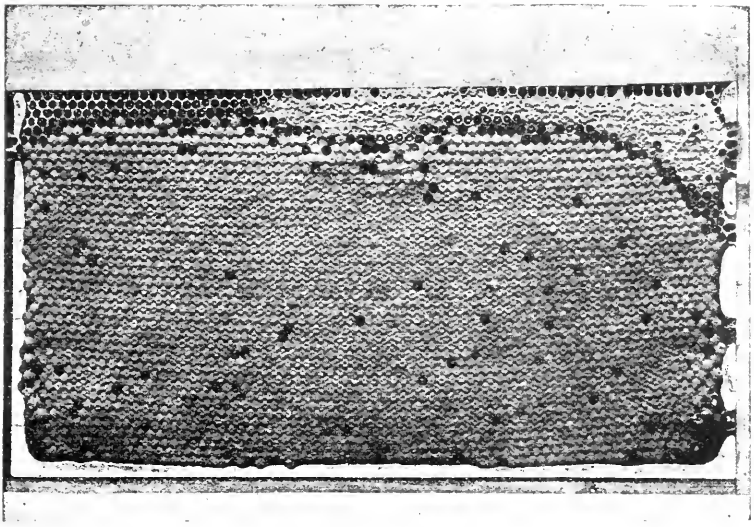
To place the bees in position and liberate them after you have them home, move them up to the opening and when all is ready to push them up to it, pull out the rags quickly and push them up in place before many bees get out. If preferred, push them up in place, and if they do not quite fit, take some bits of rags and make all tight so no bees can possibly get into the building. Now go outside, take a ladder and climb up and pull the rags out from the outside, first putting a veil on to shield the face. If, however, the situation is too high to reach conveniently from the outside, then pull out the rags from the inside and push the bees into position before many get out. When all is quiet, proceed to take off the top screen or burlap. Screw this frame on with four screws so that it can easily be removed. If you have a little smoke—every bee-keeper should have a smoker—it is a wise plan to give the bees a little smoke to make the most of them go below before removing the screen. After removing the screen or cloth, put on the section cases, which must be ready and filled with foundation starters. These will probably have to be procured from your local supply dealer, for if you are keeping only a few bees, it will hardly pay to rig up to prepare them for yourself; and, as all they cost can be obtained when they are sold with the honey, nothing is lost.

When the honey is removed in the fall and the hive is open, prepare to cover it with some porous material such as folded quilts, carpets, or one of the honey cases with the honey boxes removed. Lay a piece of burlap in it, fill with chaff and set it on the hive; but before doing this, it is well to put a piece of wire netting over the hive and put the case over this to keep the mice out. This porous material is put on because there is moisture which rises from the bees which this lets through, and they winter better for it. Some winter successfully with just the board covers sealed down, but the porous quilts are to be preferred; too many cannot be used in winter or summer.

In the Spring.

Put as many as four or even more honey cases filled with foundation on top of these two hives. Be sure to have enough, letting them go as they please till near the first of November, when the bees will cluster down in the large hive-body out of this sealed honey.

Then, with a strong knife or screwdriver, quietly pry loose these honey-cases, as they will be stuck fast with bee glue. Across the corner is the best place to pry first to loosen them, and it should not take more than five minutes



A perfect healthy frame of sealed brood or bees almost ready to hatch.

to take off the honey cases in the fall, nor more than that amount of time to put them on in the spring. Do not fail to put the honey-cases on the first of May and take them off the first of November, and, since it is quite probable that these two visits are the only ones which will of necessity be made during the year, it is essential that the work be carefully done at these times.

Remember to take off the wire screen if you have had one on during the winter, and set on the honey-cases carefully and straight, making all movements around the bees very quietly, thus avoiding all stings. Do not pound or thump on the hive, as the bees are apt to come out and resent it. Put on plenty of honey cases, as many as four at a time; or if you are at all acquainted with bees, put on two at a time every two weeks until six have been used. On top of these honey cases, pile all the winter covering. A piece of oil-cloth can be put on top of the cases first, oil side down, and the winter covering on top of this. Now let them alone, unless it is possible to have a bee expert look them over. About the first of November, when the good wife gets the buckwheat cakes started, take the honey-cases off and cover up the hive for their long winter's nap.

There must be no crevices where the wind from outside can blow up through the hives. Remember that if all is tight above, the draught from below will do no harm.

CHAPTER X

Getting Our Honey Supply With Only Two Visits a Year.

Are bees destined to give man his greatest and most easily obtained sweet supply? It really looks as if they are. There is a honey supply coming down to us each year that is greater in value than any of our farm crops or cattle, and is allowed to go to waste when it might be gathered up so easily.

Bees have spread themselves, or have been spread by man, until now there is scarcely a place where man is, where bees are not. They have, as it were, been running parallel with man, sometimes getting a little too near to him, but always as if they were saying to many, "Take and use us," but man has not been intelligent enough to do so. He now seems to be waking up to the great possibilities of the honey bee, so let's canvass the situation a little to see where we are at.

As we have said, man is on the job, the bees are with man and this enormous honey supply comes down to us each year unsolicited, and unlike our mineral wealth, which once used is gone forever, the honey supply is renewed for us each year. Then all that seems to be needed is for man to put this great combination together and use it for his benefit. Heretofore, he had not had proper understanding of the bees, nor the proper appliances to work with, but now, I feel sure that both the knowledge of the bees and the appliances to handle them have been so improved, that there should be a great advance on the double quick, to gather up this great store of the purest of all sweets and most valuable commercial product for man's benefit. So at this point it seems very fitting that we have emblazoned on the front cover of our national magazine this advice, "KEEP MORE BEES." In the past the farmers and others have had no knowledge of the bees other than to have them increase by natural swarming and in the little hives that they have been kept in, they are sure to swarm out at haying time, when the farmer is so pestered with other jobs all coming at once, that he voted bee-keeping a failure and quit. But now with the modern appliances, in which bees do not swarm naturally, he should take this matter up with vigor and secure for himself and family this sweet supply which is all about him. The bees will go out and bring it in for him and if he desires he need not even go out doors for it. It is along this line that I will now write.

I will suppose, then, that you have one or more swarms of bees. Instead of letting them swarm naturally as they have been doing, or will do if you leave them as they are, about the first of May, or just before the fruit blooms, just put on another hive body filled with good straight foundations or combs, and give access to this, that is, do not have anything between the two hives. Then put on top of these, comb honey cases for 50 or 150 pounds, and put this outfit in a shelter where they will be away from all storms and marauders, and you can go about your business till about the first of November when the bees will have clustered down in this big hive out of your surplus honey and you can lift off your honey without seeing or hearing a bee and you will receive your sweet supply with far less labor than you have

CHAPTER XI.

How To Remove Our Surplus Honey.

There has been many ways practiced in removing surplus honey. In former years before the Porter bee escape came into use we used to take off our surplus honey; carry it all into a bee tight honey house, pile the cases up cric-cross before a window and let the bees fly onto the window, turning it from time to time till all bees would leave the cases.

But now everybody is supposed to use the Porter bee escape, therefore it will be along this line I will speak. If we only have one or two cases of honey on the hive, it is not very much of a problem to raise them up or set them off and put on the bee escape board, but where we have a goodly number of comb honey supers or hive bodies filled for extracting; it becomes rather a perplexing job to know just what to do when we have to remove this surplus. Last year we had as high as six to eight surplus cases on many of our hives at the end of the white honey flow the first of August. The big double body hives were over flowing with bees, so it would have been almost impossible to have the bees go out of these surplus cases down into these over crowded brood chambers, so I hit upon the following plan which I found to work very fine and was the easiest I had ever tried. I took an ordinary empty hive body or hive with empty combs or foundation and no honey and set it down by the side of the hive that I intended to remove the honey from and put a bee escape board on this empty hive body with a bottom board. Now you are ready to remove your honey. You can take the cases off one by one from the full hive and place them on yourbee escape board. If you have more than four or five

cases or bodies it might be well to fix another empty hive or only remove a part of all this surplus at time as the bees will usually leave the cases in one night, then you can remove these and set on the balance to have the bees go out of them.

You will notice that as fast as the bees go down through the bee escape board they will go down through this empty hive and back to the old hive they were taken from. This old hive will be very crowded with bees after all these cases are removed and if you are intending to make increase this would be the time to do it. By setting this full hive away to a new stand and put another hive with combs or foundation and a new queen on the old stand all the old bees will come back to this old stand and care for this young queen till her progeny comes on the stage for action. Then you can give this new hive some of the stores from the old hive.

This is the easiest way and safest that I know of to remove our honey for you see no bees can get at your honey up through the bee escape board and if you cover your honey safely on top it could set there for a week without danger from outside robbers.

CHAPTER XII

Feed, Feeders and Feeding Bees.

There have been a great many devices made for feeding bees, and I have tried quite a number of them, and while I would not want to be discourteous to any, I would like to tell something about them and the one I like best and why.

Before we can feed anything intelligently, we have first to understand how that being takes its food. For instance, if we were going to feed a giraffe, we would not want to place its food down near its shoulders as you would feed a man or other short-necked animal, for if we did, it would probably starve to death, but if we put its food away up where none of these other animals could reach it, then it could get along very well and would have a monopoly of the food. Likewise with the bees, they take their food from above, like a giraffe, but not in so marked a degree, and to feed them intelligently, we have to understand this fact. The bees always store their food above them, and that would prove where they expect to feed during the winter. In the late fall in our climate, the bees drop down to the bottom of the hive or tree and prepare for the winter. They cluster in a round mass between the combs, in empty combs where the brood was last hatched out, but if all frames are full, they first eat out the honey in the cluster or this ball of bees as we call them, because if that

was left there, it would keep the warmth from passing from one division to the other. Then as colder weather approaches they take their honey from above and thus extend the empty combs upward as they pass up, and so they continue till the approach of spring. Upon a moment's reflection, you will understand that they could not have gone in any other direction. These separate divisions of bees could not get out of the spaces they are in and they could not cluster with their heads downward, or they would have a rush of blood to their heads and die of apoplexy. If they tried to lie down on their sides all this time, they would probably have to have an operation for appendicitis before spring, or have some bad adhesions, so "it is all up with them," as the sweeper said when he was stuck in the chimney, and therefore they pass upward to success if there is enough honey above them or to sure death if there is not. Should they reach the board, if it is a sealed down cover, or the burlap, if it is porous material as it should be, and if the honey is all gone, they will die. Nothing but good stores directly above them is of any use, as they cannot change to other combs outside of the cluster and would perish with plenty of honey in the sides of the hives, as has often been seen, for when they consume all above them, they cannot reach any of the honey stored on each side of them and so die.

When they have reached the top of the hive or board they must be fed. To feed I use granulated sugar, as we all do, when obliged to feed. With our bees in our two-body hive, we do not have to feed much, as the bees feed themselves. To make the feed or syrup, I put sugar into a pail or dish and mark or measure to where the top of the dry sugar comes, pour boiling water on it till the sugar is dissoled or melted, continuing to stir as the sugar settles down and to pour in water till it comes up to where the dry sugar was. Then you will have a syrup about right for the table or for the bees, and after the first batch, you can make it thicker or thinner by raising or lowering the water from this mark, but keep on stirring till the syrup looks perfectly clear and all the sugar is dissolved. This is important so as not to clog the feeders.

About feeders. I just use a ten-pound honey pail with friction top. This makes the best all-around feeder I have ever tried. I perforate the lid with fine holes, with a sharp small awl, the only thing to be considered being to get this perforation done as it should be. For a light colony, do not perforate out too far from the center, as the syrup might drip away if you get the holes beyond where they are any bees.

Fill your pail up to an inch or two of the top, so as to leave a vacuum, but you can feed a half pail or less if you wish. When your warm syrup is in, put on the lid, see

that it is on good so as to exclude all air and not leak. Then invert it over the bees right down on the naked frames, then put a hive body, or hive rim with neither top nor bottom around this can on top of your hive, and fill it with rags or crumpled paper, or most anything porous, and pack it down snug. Then you can put on your cover and your job is done. Your bees will take down this syrup winter or summer, and if you will keep your bees in buildings as we do, above ground, you can feed at any time or look at your feeder at any time of the year, in any weather, only do not open a bee-

I will now briefly explain some of the reasons why the bees in buildings have so much better chance to survive the winter. These bees are in two hives, one above the other, while those the old way are only in one body, consequently have less than half the stores. These big double hives inside are so amply protected, being five inches from the outside wall, which relieves them of all danger from snow, sleet or ice clogging the entrance; and being twenty inches from the ground, gives an opportunity to keep the entrance from inside and out entirely clear at all times—a thing of vast importance in wintering bees successfully. After having a sufficiency of good stores directly above the bees, I would place keeping the entrances open and clear at all times next in importance. Therefore, if we can winter and summer so successfully in buildings in this way and get so very much more fine honey, our bee men and every one engaging in bee keeping should not be slow in keeping their bees in buildings or at least testing these buildings. The value of the bees lost during the recent hard winters, that hermetically sealed all exposed hives out doors, would have built buildings for all the bees in the country.

CHAPTER XIII

Wintering Bees.

The wintering of our bees successfully has been the great problem confronting bee keepers. The winter losses have been so great some winters as to almost threaten to wipe out the industry.

Cellar wintering has been resorted to very extensively of late years, but it is found that while the bees will live in the cellar through the winter, on account of their long confinement without a flight or an opportunity to unload their bowels, they come out of the cellar in a weakened condition, for these reasons many are looking for a better way And our trials of buildings would lead us to feel confident that this way of wintering will entirely solve the wintering

problem. Because the disasters to bees wintered in the old ways in the past twenty years, have been enormous; while the percentage of losses of bees in buildings have amounted to nothing, although they have had little or no care, except perhaps the care a novice might bestow upon them, or had to get along with the care they could give themselves as they would have to do in a tree in the woods.

CHAPTER XIV.

Foul Brood and the Pearce Method of Control.

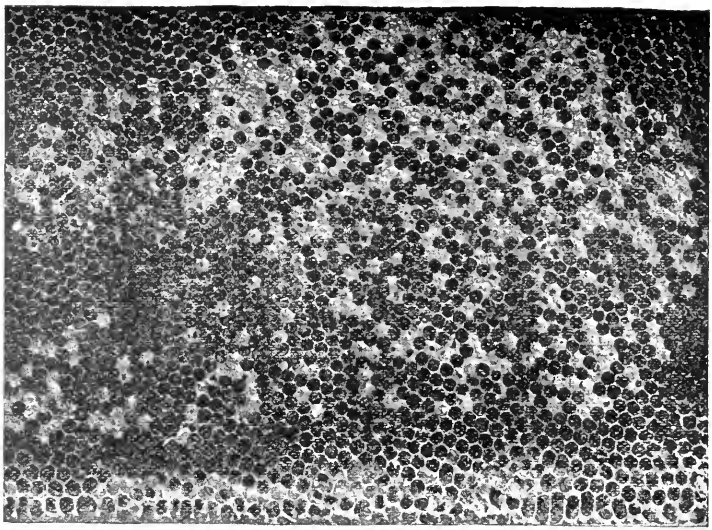
Foul brood is about the only disease that our honey-bees have. This is a disease we might say of the bee children as the adult bees do not have it. The disease seems to be infectuous thru the honey. In this way, if some of the honey from a colony that had foul brood is used by another colony and fed to their young bees, they will contract the disease. So to cure it, we have to get rid of the brood and honey that is in a foul brood colony. We have to separate the bees and queen from their brood and honey to make a cure.

To do this, several different methods have been tried. The first plan that was presented to us, was to get an empty, clean hive, and set it down where the infected one was. Then about sun-down they would shake and brush the bees and queen from these diseased combs and honey from the diseased hive, and put into this clean hive.

Sometimes they would hang one or two old, clean combs that they did not care much for and pour in a half cup or so of syrup on these before shaking the bees. Then shake in the bees. The reason for putting in these combs and syrup was so that the bees, after shaking, could unload any diseased honey they brought from the diseased hive, so they could gather up this spilt syrup and store it in the combs. Then the next night they would carefully take away these combs with what they contained. Then they gave these bees in the clean hive full sheets of foundation and let the bee draw out and fill these, and so effect a cure.

The objection to this plan is this. In shaking the bees from the combs you would be most sure to drop more or less honey that other bees might come and get, and in this way, if they did, they would cause more disease than they would cure, besides all the brood that was destroyed.

A couple years ago, a plan came from the West. This was to put the diseased hive into a water tank, put a clean hive on the top and let water into the tank, so as to float the bees up into the clean hive above. Then set the hive off into



Foul Brood. (Compare with healthy brood, page 27.)

a clean bottom board and the job was done. This plan had the advantage of keeping the bees all shut in, but it had other disadvantages that were serious. The comb and honey were wetted and healthy brood destroyed, and so was very faulty.

The Pearce Method of Curing Foul Brood.

The plan that I now use is this. First I use a hive, two hives high, proceed to set the diseased hive off its stand and put a clean hive with foundation and bottom board is its place. Make the ground clean all around it. Then open the diseased hive, pick out any diseased combs with brood from both bodies and put them into one. By this time, if you give a little smoke, most of the bees will have run into the new hive on the old stand. When the queen is found brush her into the newly prepared hive, then put a bee escape board on the new hive, and set the diseased hive above, cover up good and any sound brood that is in among the diseased will go down thru the bee escape, but cannot get back up. It is warm up there, so all healthy brood and bees will hatch, and go down thru the escape board. Now a bee that goes down thru this board, goes with the intention of going to the field for a load of honey. She always goes out empty so all impure honey is left above the escape board, and all pure honey from the field is deposited below, as no bees can go up thru the bee escape board. This is the easiest, the safest, and the best way I have ever used in curing foul brood, which I do not consider a very troublesome disease, or hard to cure in this way, for there is no commotion or spilling of honey and may be done any time of the day.

To be concise, the advantages of this method are:

First, All healthy brood is saved.

Second All the comb is saved and can be melted for foundation.

Third, There is no danger of diseased honey being scattered and picked up by stray bees, thus scattering instead of curing the disease, as all the diseased bees are shut in, and no healthy bees can get to them.

Fourth, By hatching all the unhatched brood, it leaves the comb in much better shape to be rendered into wax.

Fifth, Honey is saved and can be used instead of being destroyed, as any full combs of honey can be eaten by people, but should never be fed to the bees.

CHAPTER XV.

Robber Bees and Their Control.

Robber bees sometimes become troublesome when there is a dearth of honey, especially if there are some queenless colonies in the bee yard. It is one of the hard things for a beginner to know when bees are robbing because they so nearly imitate young bees at play, for in both cases the bees fly quite actively. But usually when young bees are taking a play spell near noon they are very peaceable while robber bees are usually quite cross and if robbing becomes prevalent they will try to sting everything around. This is one of the best ways to tell whether the bees are robbing or not by the disposition they show, that is, cross if robbing and amiable if playing.

There has been many ways devised to stop robbing. Among these, is to close up the hive entrance so as to leave a very small opening, others have used loose grass or other substances, but the robber bees usually push their way in through all these and the trouble goes on. Last year I thought of a plan that pleases me better than all these other ways. We had plenty of moving screens on hand and I just put on one of these screens on the colony being robbed to give them air and closed the entrance wholly and all at once all robbing ceased. If you have no screen just use burlap or cloth of some kind.

If it is when the bees are flying in the daytime it would be well in about a half hour to open the hive for a few minutes to let any bees that might have been in the field when the hive was closed go in and let filled robbers go out,

then close up again. Then at or near sundown open up the hive and see what's the matter. If queenless as it probably is, give it a new queen or queen cell or frame of brood with young eggs for them to raise themselves a queen. In addition it would be well the next day to change places with a strong colony. Then your troubles should cease.

CHAPTER XVI

Bee Keeping for the Far North.

We have all across our northern border, and stretching far away into the British possessions, a vast domain. This territory is well protected with snow so all plants, wild and cultivated, thrive and blossom well, but the winter is long and the cold quite continuous. If bees can be brought through the long winter safely, they are liable to store honey abundantly during the short summers, as the days are long and the bloom quite profuse; but in the low, flat hives that have been used, there is not sufficient room to hold plenty of stores to last through these long winters and through the spring until the spring blossoms come. It is here that our big double hives will fill a very important place for by having this large store of honey it will carry the bees safely through any winter that comes. This makes it possible for the people living much farther north to keep bees and get a honey supply, because the abundant snow protects the clovers and other honey plants, so that they yield plenty of honey.

The bees can be kept and handled in these large hives as described by this method, kept in fairly warm shelters, built with lumber and roofing paper. By having their entrances kept well open at all times, winter and summer they can always avail themselves of a flight whenever the weather is suitable, late in the fall and early in the spring. This also provides proper ventilation. A great deal of damage comes to bees from their entrances becoming clogged with dead bees and cappings on the inside, and snow and ice or other causes on the outside, which causes the bees to become damp. More bees are lost in this manner than in any other way. If bees can be kept dry, there is very little danger from cold of any reasonable degree. We almost forgot that our forefathers kept their bees successfully for years in single-walled box hives, and we have seen so many examples where bees have withstood low temperatures, that I feel sure many bee keepers are unduly alarmed about their bees suffering from the cold. An extensive bee keeper here told me he bought five colonies of bees that passed through that worst winter of the seventies in long box hives set up on the edges of two

wide boards and no bottoms on the hives, and they came through in fine shape and did better than any he had the next season. If cold could have killed bees surely these should have been dead. Again I saw a light afterswarm go through a winter in a double ten frame hive, one above the other with nothing but foundation in the upper hive, and only a small supply of stores in the lower hive, but they wintered well, being very dry. Therefore pay more attention to keeping your bees dry and do not be afraid they will freeze in a single thickness hive. I therefore feel sure if the people of the far north will place their bees in these large tall hives that will hold sufficient stores to carry them safely through any winter, and will put them in suitable shelters properly built, it will be possible for the people of the north to keep bees long stretches of miles farther north than they could formerly have been kept in ordinary hives. I am confident that in this way bees may be successfully kept away into the land of the Assiniboins, and far above Winnipeg, even to Alaska in our own territory. This would be a good thing for our neighbors of the north to practice on and see how far north the successful line of bee keeping can be pushed. And our people who are so favorably situated with plenty of bees in California, should push bee keeping north to Alaska. But for these great extremes, I would have large deep hives and would place first in house attics and allow the bees to fly at all times when they can.

CHAPTER XVII.

How to Care for Weak Colonies in the Spring.

This is a very important subject, no matter from what angle you look at it. It is important to save all weak colonies in the spring, and to do this in such a way that they will not be a prey to robber bees, and become a menace to the whole yard. So if you have any weak colonies in the spring, and some strong ones, you can go quietly to your strong colony, uncover it and put on a good queen excluder. Then, take your very weakest colony, and set it on the strongest. Your next weakest on your next strongest and so on, until you get to the medium. Do everything quietly, cover up well, and you can leave them for about three weeks. Then set them off, and the weak one will be filled with brood, and be as strong as any in the yard.

I once found a very weak swarm, when we set our bees out of the cellar in March. That was before I had learned a better way of wintering bees than of cellar wintering. This weak swarm contained less than thirty bees, and right

beside it was a very strong colony. The weak colony did not have a spoonful of honey in the hive, so I concluded to set this weak colony on the strong one, at once. I did so, for I felt sure they could not survive thru that night. I am willing to confess that I did not have much hope that anything would come of it, but to my surprise, in three weeks it had more brood than any other colony in the yard. Of course, that hive body was entirely empty, and so this queen had nothing to do, but fill this hive with eggs. The bees boiled up thru the excluder from the strong hive below, and carried up all needed material, and in everyway cared for the bees of this upper queen equally as well as for those below, so that they were in every way a good colony.

It was recommended by Alexander, who was the author of this plan, to set this colony off from the heavy one after three weeks, and this we used to practise, but now I would recommend a plan that suits me better. Instead of setting this hive off, I would let it alone until it was filled with eggs. Then in three or four weeks more you can go to it, carefully lift out the frames until you find the one the queen is on. Lift it out with the queen, and make a neucleus of it for a new swarm. Put your surplus cases on the big hive, and you will be due for an enormous crop of honey. Of course, take away your queen excluder from the big hive, so that the queen which was confined to the lower hive can go to both. The neucleus that was in the upper hive can easily be built up before fall into a strong double colony.

Formerly we have been taught that when a colony had run down to this low ebb, it was the fault of the queen, and the colony should be re-queened, and so I believed. This queen referred to with the weak colony was a slim one, and small, but she surely surprised me the way she built up her depleted hive, as soon as she was supplied with sufficient bees and material. So it proved in this case that is was not the fault of the queen but her surroundings and helpers that were to blame. You can see by this article that two queens can be worked in one hive, as in this case. The first time I practised it, I tried fifteen light colonies on fifteen heavy ones, and all were a success, and it has been successful every time I have since tried it.

The reason for taking only a neucleus from the two hives instead of dividing them and making two hives the same as they were at first, is as follows:

> With the one big double colony, all the bees have to do is to store honey, and you are sure of a bumper crop from this colony. A crop which would equal in size the crop normally obtained from both. In the meantime the small, weak colony can build itself up. On the other hand, if you divided them equally, you would have to put another hive on each,

in order to make the strong colonies we advocate. If this were done both colonies would have to stop and build themselves up before storing honey. If this were not done, that is, if only the lower hive were left, and the supers put on these, there is the old danger of swarming.

This method also protects the weak colony from robbery, as the strong colony below protects the upper one, for any robber bees must pass thru the strong lower hive. Of course, it is understood that altogether both colonies act as one, both going out of the same entrance. The queen excluder simply keeps the two queens apart.

CHAPTER XVIII.

Method of Queen Rearing.

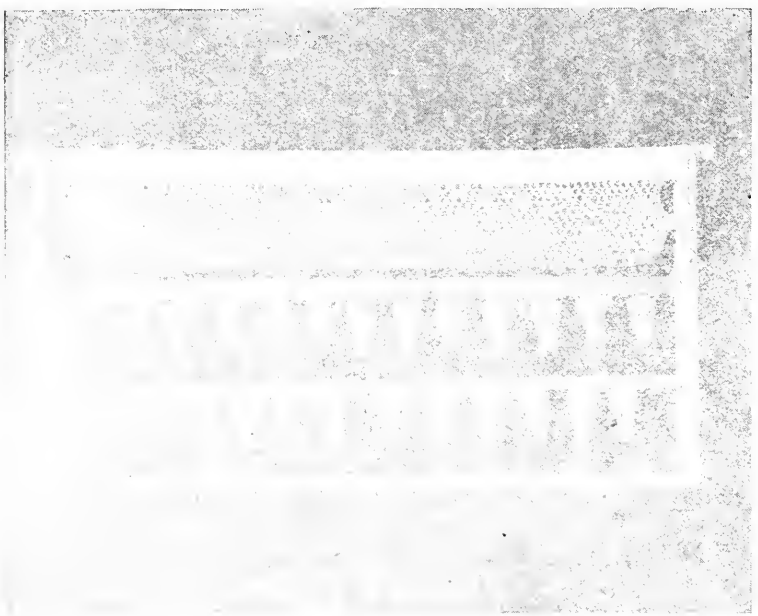
For beginners I will outline one or two of the more simple methods of queen rearing, leaving the more advanced to the artificial queen producers.

We have learned that we can make a hive of bees swarm almost any time when honey is coming in during warm weather. As we know that bees are almost sure to swarm as soon as a hive is filled. That is as soon as there is honey or polen which is called bee bread and eggs that fills all the cells and there is no more room for the queen to deposit these 2000 or more eggs per day. When this condition arrives queen cells are started and the bees swarm out to get an empty home so the old queen that goes with them can keep on laying.

If you want queen cells early just pick out a few of your best swarms to breed from and put an inverted ten pound pail of syrup with perforated lid over a bee escape board with the bee escape removed. Put a hive body around this if it is outdoors. This extra syrup will help fill all the cells in the hive and your bees will soon start a nice lot of queen cells for you. But do not have any supers on this hive else the bees may carry the honey up out of this brood chamber and so retard swarming, and that you don't want done at this juncture. Now you can watch and wait for your bees to swarm which they will do shortly. You should have picked out four or five of the heaviest swarms as near alike as possible and if you feed up all at the same time they will all swarm about the same. You can figure ten to fifteen queen cells to a hive, say ten so if you want a hundred cells you had better feed up ten hives. There will be no loss getting these cells, for as soon as they swarm or before you can put

your suprlus cases on and they will give you a lot of honey because they are so strong.

After they swarm mark down the date and about seven days after, other swarms will begin to issue. So after about the fifth day after the swarm issues you better have some work in the yard so you can be standing around and watch things closely. But the seventh or eight day you might begin to cut out the cells. If some are not mature enough you might leavc them a day or two and watch them. When you commonce to cut out your queen cells you should do it in the middle of a warm day and do not jar or handle roughly in any way. You should have an hand a set of Rafchins queen cells and you can hang the cell back into the hive that you cut them out of, the bees will keep them warm and



Set of artificially raised Queen cells. Most Queen Breeders perfer to have a special house for raising Queens. All our bees are housed at all times, so with our method, we do not need special houses.

feed the young queens after they hatch. In three or four days when all are hatched you can prepare your neucli and put your queen with them or make other disposition of them as you may need. You can make a strong swarm start queen cells at once by taking this queen away but this is not as easy for a beginner as the way just described. The second plan would be carried out the same in every way as the first only by taking away the queen to make them start the cells

at once. These plans will do for the beginner and when you are older you can take up the Brenner or Doolittle plans or any other you might choose. In raising your own queens you would probably not get pure mating and would only have hybrids if you had pure mothers to start your cells. But good-hibirds are a good deal better than no queens at all and some prefer them to the pure. What I have said in this article is for the beginner. Many are deterred from rearing their own queens because they think it difficult but in this way it is not at all hard to do. So have a lot of bees and queens either by raising them or buying them—**but have them.**

Although explaining and telling about raising queens I would strongly advocate buying queens from the South, as they are so much earlier, they can start working and building up the colonies a couple of months earlier than if grown in the North. Therefore we have a strong swarm before the honey flow starts in the spring, a swarm which is ready to work.

CHAPTER XIX.

Bees, Poultry and Fruit.

Here are three industries, any one of which, if well followed, will make a full-fledged business or occupation, but after having had the privilege of studying the whole three for some 40 years, I have fully come to the conclusion, that the best results can be obtained from a judicious combination of all of these industries.

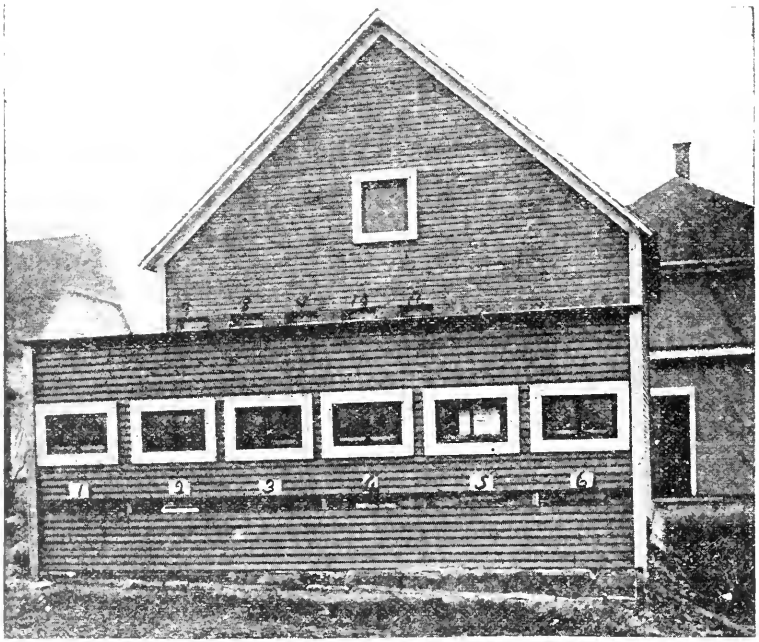
Each of these vocations are helpful to the others and in some respects absolutely necessary for the best results, for instance: The fruits are a great help to the bees and the bees are just as essential for the proper pollenation of the fruits; but some may wonder how the poultry could be benefitted or be a benefit to the bees or fruit.

The poultry needs and must have shade. We might about as well cut the heads from our poultry as to turn them into a barren lot without shade, and fruit trees, especially plum trees makes a very fine shade for the poultry and the poultry does not seem to care for or trouble the plums. On the farm our plum orchard came right down to the chicken yard, but I never knew the chicken to, in any way, trouble the plums.

But why select plums for the poultry yard? The first consideration would be because the curculio, this troublesome insect that stings the plums and destroys the fruit, cannot well exist where plenty of poultry is kept in the plum

orchard. This insect in early spring burrows in the ground about the plum trees and where the poultry is kept to work the ground over under the trees this insect cannot live.

For this reason the keeping of poultry is the best means to employ to rid the plum orchard of this troublesome pest. Then again, the plum trees are gross feeders and the droppings from the chickens is a great help in keeping up the fertility of the orchard and where a large flock can be kept, this amounts to considerable, as the chemists tell us the droppings from eight hens is equal to one cow, and if much poultry is kept they will keep the orchard entirely free from weeds, so nothing will have to be expended for cultivation, therefore the avails from the plum orchard can be had with little or no expense, and we find plums one year with another, one of the surest and most profitable crops.



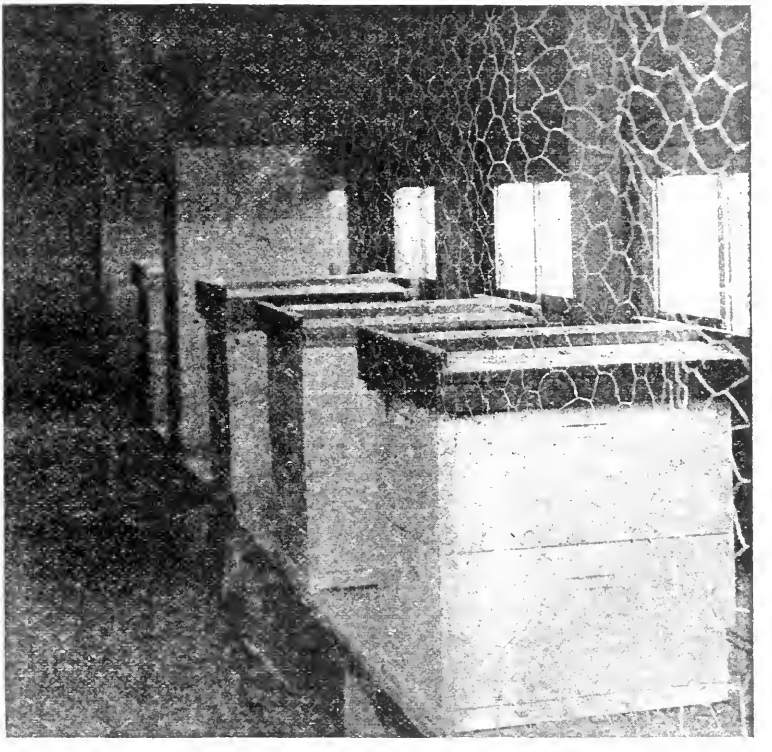
Exterior of a combined Poultry and Bee house at the author's home, showing where bees are kept in barn loft and poultry house.

If the ground is kept thus clean by the poultry it would be well to divide the grounds with a netting and sow down one-half of it at a time to oats to furnish green feed for the poultry and to draw out any strong odor from the ground.

A word about the varieties of plums to plant. With my present knowledge I think I should plant half each of Lom-

bard and October Purple. I know that the Lombard is all right and from what I have learned of the October Purple it is in every way reliable. They could be set 12 to 16 feet apart. If other fruits are to be planted they could be set outside of the poultry enclosure. But apples might also be in the chicken yard.

Now that we have learned with our improved method of bee keeping, we can just as well keep our bees and our poultry together in the same houses and same yards with no loss to either. This will greatly increase the profits and



Interior of the Poultry and Bee House shown on opposite page.

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reduce the expenses as the poultry houses are the big item of expense. If we can utilize them for the bees also and get as much or more profit than from poultry it surely should be profitable.

With these three pursuits carefully arranged on a three to five acre lot or more extensive farm, I feel sure a larger revenue can be realized from it than from any other rural pursuit I have any knowledge of.

I would try to locate on a good line of communication with a good market near one of our interurban roads if possible. I would want a good elevation on account of the fruit. The soil should be medium, not too heavy or too light. Care should be exercised in avoiding mistakes in laying out the grounds, and putting up the buildings, if none are on the ground or re-arranging buildings if any are on the place, and the selection and planting the fruits which should be started as soon as possible to attain a growth for shade and fruit.

In building the poultry and bee house, I would build it 12 feet wide and as long as you need for the flock and no higher than you need, say 7 feet. I would face it to the east as all of your windows and openings are supposed to be on that side and will be away from the direction of our prevailing severe storms and the west side against which the poultry roosts should be, made as tight and warm as possible, and then on that side fast growing vines might be planted like grapes for shade to keep off the severe west sun in the later part of the day. This will be a great relief to the chickens when they go to roost at evening. I know that facing the house to the east is quite an innovation. It has so long been the habit to face them to the south, but if you will reflect on it for a moment, you will see if you face toward the south, you make almost an equatorial heat with the sun shining on the front of the long house, and then it spoils your opportunity to protect your house, as it should be, from the west and southwest storms and wind or shade as it should be, and then the early morning is the coldest time and if the windows open to the east the poultry will get the benefit from the morning sun.

I think if you reflect on these points you will never again want to face a bee house or poultry house to the south. A house as good as we need can be built of dressed hemlock and covered all over with roofing material on the outside with some closed ventilators coming down to perhaps a foot of the floor, but for the convenience in keeping it clean I want a good cement floor in the house. It need not be thick as you never intend to drive a loaded wagon over it. Then you can scatter a little dry sand or litter over it and everything will be clean and nice.

If you will please notice the inside cut of my house, you will notice that the shelf the bees sit on is 20 inches high from the floor and 20 inches wide. Under this shelf is an admirable place for the hens' nests. I use old bee hives for this purpose. The glass of the windows should all be cut one-half inch short at the bottom to let any bees go out, so they will not die on the windows if you work at the bees when the windows are closed.

But in the summer all windows can be opened as no bees come inside enough to bother you.

In winter, we stop up this cut in the bottom of the glass with a bit of lath.

Before I close I would like to speak of the dropping board I use. I had become disgusted with dropping boards, they were so hard to clean. So I thought I would try one of oilcloth and to my delight nothing sticks to it. We throw a little sand or dust over it when ever we clean it off. If you have old wooden boards, by all means cover them with oilcloth. All poultrymen should know of this as it makes easy what used to be a hard job. I use a trowel to clean it with.

CHAPTER XX.

How Bees Behave in a Chicken House Where Bees and Poultry Are Kept Together.

This is a subject about which there is not much known. At least I did not know anything about it till I tried it. I never had heard of anyone trying it, but on the fruit farm our Brown Leghorn Chickens spent a good deal of their time in the bee yard, so much so that I thought seriously of making the bee yard into a run for the poultry. I have heard that bees sometimes sting chickens, but I never saw a case of it, so I do not believe it is prevalent enough to give any harm.

Last year we had 30 hens and 6 large colonies of bees together all summer and they did not seem to give any trouble to the hens, and the hens seemed to take well to the bees. The poultry house was 10 feet wide and 18 feet long. It is built across the end of the barn and faces to the east. As we understand, poultry house construction, there always should be one dark side and one very light side for the poultry themselves so it makes it easy to arrange it for bees after it is built for chickens. The roosts were arranged on the dark side of the house, as they always should be, and all along the front as you see, there is a row of windows and just below these windows we built a shelf 20 inches high and 20 inches broad. The length of the house, and on this shelf the bees are put. This places them high enough to work with well and also they are high enough so the chickens can go under this shelf where they have their nests in some unused bee hives, and we hang a curtain down from this shelf and this makes a dark place for the nests, which the hens like. The hens have all the floor space they would have had if the bees were not in and to keep the hens from flying up on the bee hives, we just screen down from the top with 2 inch poultry netting to the edge of the shelf

behind the bees. This neting we have in 6 foot lengths and a light bar across the bottom which we hook up to the roof when we work at the bees, which is not very often, as we keep them. Two visits a year will do, if we don't care to give them more. Once to look them over in the spring to see if they are free from foul brood, and put on our honey cases and again to take off honey and fix them for winter. But the hens we have to visit over 700 times a year, if we only see them twice a day, and the feed we give these hens for the year, if seen all together, would frighten us. And yet poultry raising is lauded to the skies while bee keeping it is not thought amounts to much, but you will find a few colonies of bees will bring you more clear money than quite a large flock of chickens, and will not require a hundredth part of the labor to care for them, as the bees work for nothing, and board themselves and so require no feed from you, and little attention.

CHAPTER XXI.

The Real Mission of the Bees.

We have all of us been, I think, inclined to look upon the bees as gatherers of honey, mainly as this is what they were made for. There has been some good reason for this for the honey has been the thing which they produce that we all have had our eye on and it has appealed to our taste as well. But the polen they bring in is not so attractive to us. We have looked upon it as a by-product rather in the way as we used to get our honey. We formerly used to call it bee bread.

Even Dr. Watts (that almost matchless poet) wrote for us those memorable lines. "How doth the little busy bee improve each shining hour and gathers honey all the day from every opening flower." But he does not say a word about the polen she gathers, although he seemed to have knowledge enough of the bee, even at that early day to know that it was the lady side of the house that did all the work. As he wrote: "How skillfully she builds her cell. How neat she spreads her wax. And labors hard to store it well with the sweet food she makes." But not a word about polen. And yet it seems that polen gathering and polen distribution is the real great work for which the bees were designed, because it has been made by the great designer, imperative in two ways: That the bees must have and use polen. In the first place, the bees cannot rear their young without this polen; and in the second place the honey is placed below the polen and in going down after the honey, her head comes in contact with the polen which she hastens to deposit fresh

on the next blossom. No other agency known can do this work so perfectly and economically as the so-called honey bee. As she does not allow this polen to get stale, for every so often she rubs off this stale polen and places it in her hip pockets and when she gets a load of honey she carries it home to feed the babies on, for honey alone seems to be too strong, or something, and so imperative is this need for something to mix with honey, that in the spring before the blossoms come the bees will carry in horse feed and in the absence of this they will take in soft wood saw dust to mix in the honey. And so we see the beauty of this all. And why bees are the greatest friends of the orchard man as they will give him very much more and larger and better fruits. Turning many of his second apples into firsts, and besides doing this work for nothing and boarding themselves, a good swarm of bees with our modern appliances will store for its owner from 50 to 200 pounds of comb honey per year. In looking the matter over from my view point, I wonder that so many orchard men do not keep bees of their own and rake in those benefits from both ways instead of running the precarious risk of having the other fellow keep the bees for you and eat all the honey gathered from your blossoms. In the near future, as soon as man becomes more advanced, when we visit a large fruit establishment and after being shown by the owner his great spraying outfit, I should expect to have him take me to visit his fine apiary in modern up-to-date hives, well housed and cared for like the other stock on the place, for if they are thus cared for they will bring a larger dividend for very much less labor than the other stock or even fruits.

CHAPTER XXII.

Facts and Comments.

One pound of honey is worth three pounds of sugar.

Our hives average 100 pounds of honey per hive, which equals one barrel of sugar.

The first swarm of bees was brought to Booston around 1600.

Miss Mattie Rogers, Clyde Park Ave., Grand Rapids, Mich., started with one of our swarms about 1908 and obtained 183 pounds of honey the first year. From an average of 17 colonies over a period of six years, she averaged 1818 pounds per year. Miss Rogers started as a novice.

The Pearce New Method of Bee Keeping is the result of 40 years actual experience. Any chapter worth more than the price of the book.

Honey is a necessary food, like wheat, bread, and meat. It helps to make up a balanced ration.

The present price of honey, willmake even a light crop pay first cost of the bees, and give a comfortable surplus.

Mr. Wernicke of Grand Rapids, Mich., averaged this poor season 150 pounds of honey from six colonies. Last year he received over 200 pounds per colony. His bees are kept by our method.

Always leave plenty of stores about your bees. Bees eat upward and must have plenty of food above them.

Bee ventilate their hives by moving their wings like an electric fan.

The most common bees found in this country are the Black and the Italian. Others are a mixture from these.

The Italian bees are considered the best as they are gentler and easier handled.

A swarm averages about 50,000 bees in a single hive.

Our hive averages from 100,000 to 200,000 bees.

Bees are sold from the south by the pound. From one to three pound lots are placed in a cage when shipped.

Two pounds of bees are generally placed in a hive with the queen.

Queens are shipped in cages with full directions how to liberate. Food is packed in the cell with them.

Pollen is carried in pockets at the joining of the rear legs and the body. The pollen clings to the bees when they are after the honey, and they brush it back to these sockets.

Carrying the pollen from flower to flower pollenates the fruit.

Every house in the land has room for from one to ten hives. These can be put in without extra expense for building. In this way we can help conserve and gather an unlimited supply of sweets.

"Gather Honey and Conserve Sugar."

Any building or place where bees are kept should have the windows open outwards. This can be easily done, by boring a hole through the sash, into the casing on each side. Then drive a 20 or 40 penny spike for the windows to turn on. Drive your spike the distance from the top of the window that you wish your window to turn in.

Never handle bees in the dark, as they will sting the minute they touch you if it is dark. Always have plenty of light.

Bees will go towards a light.

Always wear white or light colored clothing when handling bees. A covering of mosquito netting and a little smoke will keep you from getting stung.

Never wear clothes that will let the bees crawl up in under clothing. Bees always crawl up. Tuck in clothes so as to be arranged like reversed clapboard or shingles on a

house. Cover in order named, hat face clothes, shoes, and all with mosquito netting, leaving no openings for them to crawl under. Where flaps or edges cover each other have the lower piece of netting or clothing outside.

The worker and queen larvae are fed the same for the first three days, after which the worker is given a coarse food called pap, while the queen is given plenty of food called Royal Jelly during the entire growth.

The queen bee lives from three to five years.

The worker lives only about six weeks in the working season as they wear themselves out.

All worker bees die every spring.

A worker gathers only a spoonful of honey in its life time.

Drones never produce anything themselves.

The queen of her own free will, except to swarm never leaves the hive but once.

The queen makes this one flight, to mate, when she is a few days old.

The queen lays from 2000 to 3000 eggs a day, all of which could be made into queens.

The queen is never mutilated by the worker. Her person is sacred. If she is judged and found guilty, they execute her by forming a solid ball around her and thus suffocate her.

Bees, reject paraffine as foundation.

The most interesting study in the world, and the most profitable business. Give the bees a home and they will work and earn money for you.

Always start right in bee keeping, using the best Italian Bees, the best dove-tailed hives and Hoffman frames and the Pearce Method.

FATHER I. L. LANGSTROTH.

The Originator of our Removable Frame Hive.

LORENZO LORRAIN LANGSTROTH, sometimes called the "Father of American Apiaculture" was born in Philadelphia, Dec. 10, 1810. He entered Yale College graduating in 1831. In 1837 he became interested in bees by seeing a glass vessel filled with beautiful comb honey at the house of a friend. He became enthusiastic and at once purchased two colonies of bees. In 1848 he began to experiment with hives of different forms and after much study and experimenting he devised the Movable Frame Hive.

This invention gave him perfect control over the combs of the hive and gave a new impetus to the easy and profitable management of bees.

Mr. Langstroth afterward engaged in the propagation of Italian Queens on a large scale.

His many writings on the subject of bees have made his name venerated by American Bee Keepers, who are aware of the great debt due him by the fraternity.

CHAS. DADANT.

MR. CHAS. DADNAT was born May 22, 1817 at Vaus-Sons-Aubigny, France and came to America in 1863 setting in Hamilton, Ill., and engaged in Bee Culture, which is his hand yielded marvelous results. He soon became noted as one of the Leading Apiarists of the world. Mr. Dadant has been a prolific writer and his contributions to the Leading American and European Been Juornals have made his name thoroughly familiar to apiarists all over the world.

A. I. ROOT.

The name of A. I. ROOT deserves to be considered a household word. His great crowning work, the A-B-C and X-Y-Z of Bee Culture, which is an encyclopedia on this subject would be enough to immortalize any man.

The great work he has been doing later for the upbuilding of the home and the elevation, morally and physically of his fellowmen, must endear him to every lover of the good, the pure and the true. It is a great thing to so live that all our lives, like his, are devoted to the uplift of humanity.

E. R. ROOT

Fortunate indeed has it been for Bee Culture that we have such men as the Roots to write down and record observations and facts about bees. E. R. Root whose picture appears above is now carrying on this great work as editor of "Gleanings in Bee Culture". He started active work in 1883, although he has worked among bees since childhood. He has worked with such zeal that he is now a central figure in Bee Culture, an authority upon the subject and has a great many improvements and inventions to his credit. He believes in strong colonies and reduced swarming as we advocate and has been very successful in choosing new devises.

We might say that A. I. Root is the "A. B. C." of Bee Culture and that E. R. Root is trying hard and with great success to reach the "X. Y. Z." of course there will always be more to learn, but even if this pinnacle can not be reached, them two men and their associates have done such work that Bee Men and the world should always be grateful.

SUMMARY

We present these few testimonials from these very busy people, who are well known to all of us, for the encouragement of those who may not have had much of any experience with bees, to show them with what ease these people get this large yield of honey from year to year by this method. None of these people had ever kept bees before.

This you will notice is all made possible by having the bees in this large hive, made of two ordinary hives, and then placing this hive inside of a building or shelter where it is safe at all times and can be most easily cared for. The fact that we can get such a large supply of comb honey should appeal to every one.

It has heretofore been impossible to produce comb honey without swarming, and this swarming was a great trouble to any one starting with only a few colonies of bees. They did not have enough time to spare to watch them, and swarms would issue and go away in the absence of the keeper. This made it so uncertain and has been the great cause of so many starting in bee keeping and being obliged to give it up. Now with this new way, where the bees do not swarm till you wish them to, it makes it possible for people in other business, to begin bee keeping and pursue it till they can give up their other occupations and devote themselves wholly to the bees if they wish. For this reason it will make a fine vocation for ladies as well as gentlemen. It is an open aid business and you are not confined to it except for a minimum of time through the summer months, as the bees are dormant in winter.

This is so different from poultry keeping, which many have tried, but in which the constant care has been so great that many have been obliged to abandon it. We know of

nothing that should appeal to teachers and others in various walks of life so much as bee-keeping by this method. It can be taken up almost anywhere that you happen to be, in city or country, as honey is found plentifully in any locality. Not much capital or land is needed to start. Neither does it require an expensive outfit to begin. You can start with one colony if you wish. It is all very simple and you should learn it in a day or two. It is nothing to learn as compared to the poultry business or fruit raising or many other pursuits, and vastly more profitable.

Should this book become interesting to many and be instrumental in helping some young person to a start in life, or make life easier and more pleasant for some aged person, it will be a source of gratification to the author and his efforts will not have been in vain.

Author's Note.

I wish here to acknowledge and thank my young associate, W. T. CROSSMAN. I can not thank him enuf, or give him due credit, as it is to him I owe the revision, betterment and compiling of this Third Edition

JOSEPH A. PEARCE.

Grand Rapids, Mich.

This is to certify that I am keeping bees by the Pearce System. Last year one outfit gave me 150 pounds of fine comb honey in one-pound boxes. The work in caring for them was merely a pastime as compared with the old way when they used to swarm out just when we were at our haying, fighting potato bugs, and perhaps a dozen other jobs. It would be well if this plan could be brought to the notice of all our farmers. I am a dairy farmer in the Grand River Valley north of Grand Rapids.

L. A. HUBBARD, R. R. No. 9.

I have kept bees in my city home in Grand Rapids, using THE PEARCE METHOD OF BEE KEEPING for the past two years. I had absolutely no experience with bees and gave them little care. I followed the instructions in THE PEARCE METHOD and in addition to harvesting 144 lbs. of the finest clover honey this past summer, I had such an increase in bees that I made another colony by following the Pearce instructions. There was no swarming during the entire year and both hives went into the winter in good, healthy condition. The original outfit cost $15.00 and this year's crop of honey was worth $50.00, besides the new colony of bees.—George W. Welsh, publisher of The Fruit Belt.

Grand Rapids, Mich.

Mr. J. A. Pearce,
City.

Mr. Dear Mr. Pearce:—

I take great pleasure in recommending your system of bee keeping, and for the benefit of those interested, will give a very brief statement of results obtained in three years.

In 1911 I began with one swarm of bees, keeping it according to the "Pearce Method." The following year I had three swarms of bees and 170 section boxes of finest white honey from the one swarm. The next year I took 360 section boxes from the three swarms.

Last summer was not a very good one for the honey crop, there being almost no white clover near here, however my three swarms stored nearly 300 section boxes.

About August 20 I divided two swarms, making five in all, which I now have in fine condition for this year's work.

I shall always be grateful that I learned of your "method."

MATTIE J. ROGERS,
R. R. 1.

Mr. Joseph A. Pearce,
Grand Rapids, Mich.

My Dear Mr. Pearce:—

Permit me to express my gratitude to you for suggesting the plan of having a swarm of bees so arranged in my barn as to give continuous satisfaction at a minimum expenditure of energy and thought. Since you placed the hive of bees with me, I have found scarcely any care necessary and they have returned to me forty to sixty pounds of honey per year, which has enabled me to make a good many friends happy, for I know of no more delightful gift to a neighbor than a card of beautiful honey. The venture has been in every way a success and I wish more people would take advantage of your plan.

Yours very truly,
CHARLES A. GARFIELD.

THE WIDDICOMB FURNITURE CO.

Grand Rapids, Mich.

My Dear Mr. Pearce:—

I have taken no small amount of interest in your recent exposition of bee culture, especially that phase of it showing how simple a matter is the care of a single hive of bees for a family supply of honey.

I think it is twelve years ago that I installed in my barn a hive of bees received from you. During all these years we have had an abundant supply of honey, and no attention whatever has been given to them other than an occasional examination that we might note they were prospering. During this time we have taken from the hive all the honey we required for our personal use, and in addition to that all needed for the lunch room of The Widdicomb Furniture Company in the exposition seasons, for my hive has grown to be exceedingly productive.

Very truly yours,
Mr. J. A. Pearce, City. WM. WIDDICOMB.

THE BELKNAP WAGON COMPANY.

Mr. J. A. Pearce,
City.

Dear Sir:—

I take pleasure in writing and thanking you for the swarm of bees bought of you a little more than a year ago and placed in the attic at my home on Madison avenue. Last summer I found that the hive was completely filled with honey and on taking it out found that I had 134 pounds of the purest and whitest comb honey.

As a money investment it is one of the best I have ever made and the pleasure of having the bees and seeing them about is of greater value to me than any profit I may make out of the honey. As it is I have had honey to give my neighbors, have sold quite a bit of it and have plenty left to supply my friends for the entire year. I think I shall have to put in another swarm during the coming season.

Very respectfully,
C. E. BELKNAP.

A. J. VANDENBERG.
Savings Teller, Grand Rapids Savings Bank.
Grand Rapids, Mich.

Mr. Jos. A. Pearce,
City.

My Dear Mr. Pearce:—

I wish to say just a few words relative to your method of keeping bees.

In the autumn of 1907 you suggested that I try a swarm and handle them under the "Pearce system." I did not have very much faith in it at the time, but on your strong recommendation I bought a swarm. In the spring of 1908 they showed up strong and went to work at once. At the end of the season I was surprised to find that they had gathered 156 pounds of comb honey, and I at once ordered another swarm.

The results were beyond my highest expectation as several of my neighbors have bees under the old method and scarcely ever get any results. The fact that they use their bees in connection with their greenhouses may have something to do with their lack of success, but I feel that your system is certainly the right one, as there is practically no work connected with it excepting the removal of the honey and taking care to cover the hives in winter.

Yours respectfully,
A. J. VANDENBERG.

EDWARD M. DEANE & COMPANY.
Grand Rapids, Mich.

Mr. Joseph A. Pearce,
City.

My Dear Mr. Pearce:—

In reply to your inquiry as to whether I was satisfied with the swarm of bees purchased from you two years ago, will say that they have been highly satisfactory. Your method of having bees so that they do not swarm is certainly very satisfactory to the amateur bee-keeper as they require no attention whatever, only to take the honey off in the fall.

The hive that I have did not become thoroughly established until about the middle of the season of 1908, but I am pleased to tell you that we took off in the fall about 35 pounds of very superior honey, leaving for the bees themselves in the lower sections of the hive, I should estimate, nearly 100 pounds of honey. At the present time they are in fine condition and I have no doubt but what the coming season, if it is a good one for honey gathering, I will get from 100 to 150 pounds of merchantable honey.

Hoping that this may be of some assistance to you in inducing people to adopt the "Pearce System," I am,

Very truly yours,
ANNA BISSELL, by Dwight Smith.

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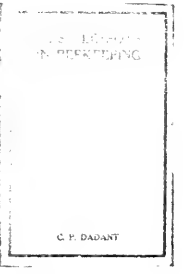

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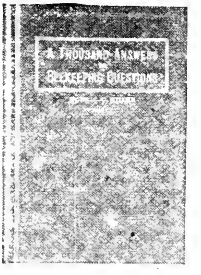

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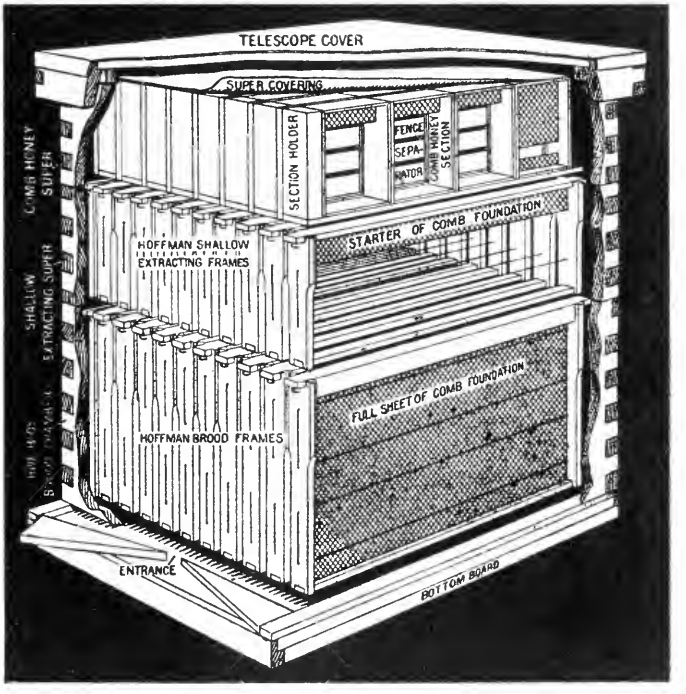

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